



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,955	10/03/2008	Stefan Baldauf	2003P15348WOUS	6213

22116 7590 03/05/2012
SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

MCDOWELL, LIAM J

ART UNIT	PAPER NUMBER
----------	--------------

3745

MAIL DATE	DELIVERY MODE
-----------	---------------

03/05/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,955	Applicant(s) BALDAUF ET AL.	
	Examiner LIAM MCDOWELL	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2012.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 11-20 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 11, 12, 14 and 16-18 is/are rejected.
- 8) ☒ Claim(s) 13, 15, 19 and 20 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment overcomes the specification objection and the claim objection of the last Office action and, therefore, these objections are withdrawn.

Response to Arguments

2. Applicant's arguments, see Amendment, filed 5 January 2012, with respect to Tiemann (WO 99/60253) have been fully considered and are persuasive. Specifically, the weld 43 connects the platform 35 to blade leaf 26 and provides structural support to the blade leaf 25. The 35 USC 102(b) rejection of claims 11-14 and 17 over Tiemann has been withdrawn. In addition the 35 USC 103(a) rejections of claims 15 and 18 are also withdrawn.

3. However, applicant's arguments filed 5 January 2012 with respect to Albrecht (US 3,950,113) have been fully considered but they are not persuasive. Applicant asserts that neither cover plate 24 nor web plate 15 of Albrecht structurally supports the blade core (see amendment page 9, lines 1-2). Rather, web 14 structurally supports blade core 16. Applicant then asserts that the web plate 15 is not continuous with the blade core and does not include a set-back and thus, Albrecht does not disclose each of the limitations of claim 11. These assertions are incorrect. As clearly seen in Fig. 2 of Albrecht, the blade core, web 14 and web plate 15 are formed as one continuous piece as evidenced by the shading (see also claim 4). Thus, both web 14 and web plate 15 both provide at least some structural support for blade core 16. As admitted above,

Art Unit: 3745

cover plate 24 does not provide structural support for blade core 16. Thus, Albrecht discloses two platforms 15 that provides structural support and 24, which does not. In addition, platform 15 provides a set back (spacing) with respect to plate 24 based on recess 23/pocket 25 as seen in Fig. 2. In view of the above discussion the 35 USC 102(b) rejection over Albrecht is maintained.

4. As to the 35 USC 013(a) rejection of claim 18 in view of Albrecht, applicant asserts that cover plate 24 is not sheet metal does not have an airfoil shape and is not at a transition from the blade profile to the platform. Applicant also asserts that plate 15 is not at a transition and does not include a retaining stop. These assertions are also incorrect. Platform 24 clearly is sheet metal (see claim 1, column 3, lines 49-50), which is distinct from blade jacket 19 (see claim 6). As to the sheet metal being resilient and elastic, these terms are redundant and require that (an object or material) is "capable of regaining its original shape or position after bending, stretching, compression, or other deformation; elastic." *Collins English Dictionary - Complete & Unabridged 10th Edition* 2009 © William Collins Sons & Co. Ltd. 1979, 1986 © HarperCollins Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009. If an item is capable of being bent (forming a step see column 2, lines 66-66) it is capable of being unbent (regaining its original shape). Thus, the sheet metal of Albrecht is resilient and elastic. Since the platform 24 covers recesses 23 (see column 2, lines 30-32) and is attached to the blade jacket (see claim 5), the platform includes an aerodynamic shape along a width of the platform. The transition from the blade to the platform necessarily includes the platform (innermost edge thereof) and therefore, the platform 24 is arranged along the transition. As to

Art Unit: 3745

platform 15 the same logic applies and thus platform 15 is also arranged along the transition. As to the recited retaining stop, the thickness of the platform 15 provides a stop about which the step of platform 24 is retained. In view of the above discussion each of the limitations of claim 18 are met and therefore, this rejection is maintained.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11, 12, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,950,113 to Albrecht.

In Reference to Claim 11

Albrecht discloses a turbine blade (see title), comprising:

a blade leaf 16 arranged along a blade axis having a blade tip (near 16 –Fig. 1), a root (near 14 – Fig. 2) opposite the tip, a suction side and a pressure side (inherent in an airfoil shaped vane as seen in Fig. 3);

a platform region (near 15) arranged at the root of the blade leaf;

a platform 15 arranged at the platform region having a width (defining space 25) and extends transversely with respect to the blade axis (see Fig. 2);

Art Unit: 3745

a first platform wall 24 arranged along the transition from the blade leaf to the platform that does not structurally support the blade leaf and has along the width of the platform an aerodynamic shape (element 24 is formed along the contour of the blade and thus, has an aerodynamic shape); and

a second platform wall (at 15) arranged in the platform region that structurally supports and is continuous with the blade leaf and has, along the width of the platform, a set-back step with respect to the first platform. See Fig.3 with recesses 23 set back with respect to plate 24. Please note that the claim does not require the set-back to be along the entire width of the platform, only along the width (arranged in a width direction).

In Reference to Claim 12

Albrecht discloses the turbine blade as claimed in claim 11 (as discussed above), wherein an interspace for cooling the platform is formed between the aerodynamic shape of the first platform wall and the set-back step of the second platform wall. See pocket 25.

In Reference to Claim 14

Albrecht discloses the turbine blade as claimed in claim 11 (as discussed above), wherein the second platform wall thickness is greater the first platform wall thickness. See Fig. 2.

Art Unit: 3745

In Reference to Claim 16

Albrecht discloses the turbine blade as claimed in claim 11 (as discussed above), wherein the first platform wall is formed by a resilient elastic sheet metal part arranged adjacent the blade leaf. See column 1, lines 8-9.

In Reference to Claim 17

Albrecht discloses the turbine blade as claimed in claim 11 (as discussed above), wherein the platform extends on both the pressure and suction sides of the blade leaf. See Figs. 2 and 3.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht in view of Applicant's Admitted Prior Art (AAPA).

In Reference to Claim 18

Albrecht discloses a gas turbine, comprising:

a plurality of annularly arranged turbine blades 16,

wherein each turbine blade comprises:

- a blade axis perpendicular to the turbine axis,
- a blade tip (near 16 – Fig. 1),
- a blade root (near 14 – Fig. 2) arranged radially opposite the blade tip,
- a blade platform 15 arranged adjacent to the blade root and extending

transverse to the blade axis (see Fig. 2),

a blade profile having an airfoil shape arranged between the blade tip and the blade root (see Fig. 3), wherein:

a first platform wall 24 formed from a resilient elastic metal sheet (see column 1, lines 8-9) arranged along a transition from the blade profile to the blade platform that does not structurally support the blade profile and has along a width of the platform an aerodynamically advantageous curved shape (element 24 is formed along the contour of the blade and thus, has an aerodynamic shape along its width), and

a second platform wall (at 15) arranged along a transition from the blade profile to the blade platform that structurally supports and is continuous with the blade profile and has, along the width of the platform, a set-back step with respect to the first platform (see Fig. 3 with recesses 23 set back with respect to plate 24). Please note that the claim does not require the set-back to be along the entire width of the platform, only along the width (arranged in a width direction), and a retaining stop to retain the first platform wall (see column 2, line 66 to column 3, line 3).

Albrecht does not explicitly disclose that the gas turbine comprises a flow duct extending along an axis of the turbine having an annular cross section for a working

Art Unit: 3745

medium; and a plurality of blade stages with blades that extend radially into the flow duct arranged one after another along the axis of the turbine.

Page 1, lines 11-35 of the present application disclose that a ducted turbine having a plurality of stages is a conventional configuration for a gas turbine. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the turbine of Albrecht to be part of a gas turbine with a flow duct and a plurality of turbine stages as such a configuration is a conventional configuration for housing the turbine blades of Albrecht.

Allowable Subject Matter

9. Claims 13, 15, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art to Albrecht teaches recesses having a varying depth (including portions where there are no recesses), but does not teach or reasonably recesses (an interspace) having a uniform height along an entire width of the platform as recited in claim 13. Albrecht cooling passages 26 in one region of platform wall 15, but does not teach or suggest a plurality of cooling passages per unit area greater along the transition from the blade leaf to the platform than in the remainder of the platform region as recited in claim 15.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIAM MCDOWELL whose telephone number is (571)270-1611. The examiner can normally be reached on Monday-Friday 9:00 am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EDWARD LOOK can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LIAM MCDOWELL/
Examiner, Art Unit 3745

/EDWARD LOOK/
Supervisory Patent Examiner, Art Unit 3745